

REMARKS/ARGUMENTS

Claims 1-16 are pending in this application. Claims 1 and 11 have been amended. Claim amendments find support throughout the Specification, in particular in paragraphs [0021] and [0043] and in Figs. 3b and 6 of the application as filed. No new matter has been added. Reconsideration of the rejected claims is respectfully requested.

CLAIM REJECTIONS - 35 U.S.C. § 103(a)

1. Claims 1-7 and 9-15

Claims 1-7 and 9-15 were rejected under 35 U.S.C. § 103(a) as being obvious over Iwata (U.S. Patent No. 5,293,538) in view of Mitsuhiro (Japanese Patent No. JP 2003-247952).

The Office Action states that Iwata discloses all the limitations of claims 1-7 and 9-15, including, inter alia, an imaging sensor. The Office Action further states that although Iwata does not disclose the means for obtaining information on light scattered in the first layer and the second layer of the object from the representation, the deficiency is allegedly overcome by Mitsuhiro's disclosure of the light scattering in the first layer (numeral 4 of Fig. 4) and the second layer (numeral 2 of Figs. 5 and 6). Applicants respectfully traverse the above rejection for the reasons set forth below.

Applicants disagree with the Examiner's interpretation of "scattered" light. Mitsuhiro refers to multi-directional light reflection off the surface of the irregularity, which is not the same as what is referred to as the scattered light in this application and the claims. However, in order to further the prosecution of the case, Applicants have amended independent claims 1 and 11 to recite the limitations of, inter alia, "a single two-dimensional imaging sensor" and "obtaining information from the representation of light scattered by entering the object and emerging from the object at a different location from the entering location after being spread in the first layer and the second layer of the object from the representation."

Iwata, which the Office Action relies upon for the disclosure of a sensor, teaches multiple sensors needed to acquire an image, not a single two-dimensional imaging sensor, as

recited in claims 1 and 11. Iwata's apparatus relies on two light sensors: a linear sensor 38 to detect "only a scattered light 96 from the transparent foreign particle 6" (col. 6, lines 31-32) and a linear sensor 48 for "the detection of the light 97 which is the regular reflection of the slit light 94" (col. 6, lines 41-42). Thus, Iwata does not disclose a single two-dimensional imaging sensor.

Furthermore, a person skilled in the art of imaging sensors would, based on his or her background and on what is taught by the cited reference, have no reason for attempting to use Iwata's disclosure to develop a single two-dimensional imaging sensor as in claimed device. Since Iwata's apparatus is based on the directionally reflected light impinging on sensor 44 and the specularly reflected light, which Iwata incorrectly calls "scatter," impinging on sensor 38. Therefore, a person skilled in the art of light sensors would realize that the different directions of light leaving Iwata's object make it necessary to position the sensors in the different light interception locations, thus teaching away from a single two-dimensional imaging sensor recited in claims 1 and 11.

The above deficiency of Iwata is not overcome by Mitsuhiro, which teaches a one-dimensional CCD camera (paragraphs [0030] and [0032]), not a single two-dimensional imaging sensor, as recited in amended claims 1 and 11. Furthermore, a person skilled in the art of imaging sensors would find no suggestion for a single two-dimensional imaging sensor in Mitsuhiro's one-dimensional CCD camera disclosure, because the presently claimed system and method must sense both the reflected and the scattered light over an area, the task for which Mitsuhiro's one-dimensional camera (i.e., a line sensing camera) is clearly unsuitable.

At least for the above reasons, independent claims 1 and 11 are non-obvious over Iwata in view of Mitsuhiro.

Additionally, neither Iwata nor Mitsuhiro disclose or suggest the limitation of claims 1 and 11: "light scattered by entering the object and emerging from the object at a different location from the entering location after being spread in the first layer and the second layer of the object from the representation." Iwata discloses the light passing through one layer of the object only (see, e.g., Fig. 6). Iwata does not disclose the light spreading in the second layer of the object. A person skilled in the art would find no suggestion in Iwata towards the development of the system and method of claims 1 and 11, because Iwata is concerned with

detecting the voids or impurities in a single layer, i.e. the protection layer of a device (see, e.g. Abstract in Iwata), whereas the presently claimed system and method aims at detecting the defects in both the first layer (layer 2a) and the second layer (layer 2b) of an object (see, e.g., Figs. 2b and 4b of the Application). The above deficiency of Iwata is not overcome by Mitsuhiro, which discloses the light that was either reflected from a surface imperfection (see, e.g., numeral 5 in Fig. 4), or the light that travelled through the first layer (4 or 24) and then was reflected from the interface with the second layer (see, e.g., numerals 2 or 25 in Figs. 5 or 16, respectively).

At least for this additional reason, independent claims 1 and 11 are non-obvious over Iwata in view of Mitsuhiro.

Claims 2-7, 9-10, and 12-15 add limitations to their non-obvious base claims 1 and 11. Thus claims 2-7, 9-10, and 12-15, which are non-obvious in their own right, are allowable because they depend from their allowable base claims 1 and 11.

2. Claims 8 and 16

Claims 8 and 16 were rejected under 35 U.S.C. § 103(a) as being obvious over Iwata and Mitsuhiro as applied to claims 1 and 11 above, and further in view of Takeda (U.S. Patent 5,936,726). The Office Action states that Takeda provides the missing polarizer from the Iwata and Mitsuhiro disclosures, thereby making claims 8 and 16 obvious.

Independent claims 1 and 11 are non-obvious over Iwata in view of Mitsuhiro, as explained in detail above. Claims 9 and 16 add the limitations to their non-obvious base claims 1 and 11, respectively. Thus claims 8 and 16, which are non-obvious in their own right, are allowable because they depend from their allowable base claims 1 and 11.

CONCLUSION

In view of the foregoing, applicants submit that this application is in condition for allowance, and a formal notification to that effect at an early date is requested.

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Amdt. dated October 8, 2008
Reply to Office Action of June 26, 2008

PATENT

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (415) 273-4317 (direct dial).

Respectfully submitted,

A handwritten signature in black ink, appearing to read "J. Mihailovic". The signature is fluid and cursive, with the first letter "J" being large and prominent.

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